

IESO Strategic Plan 2016–2020



Connecting Today.
Powering Tomorrow.

Table of Contents

Letter from Bruce Campbell and Tim O'Neill	1
Vision, Mission and Values	2
Environmental Scan	4
IESO Strategy (2016–2020)	7
Looking Ahead	12

Letter from Bruce Campbell and Tim O'Neill



Ontario's electricity sector continues to undergo transformational change – as the sector evolves, the Independent Electricity System Operator (IESO) too must evolve to maintain the value we deliver to Ontarians. To prepare for these coming changes, we

have developed a five-year corporate strategy that defines our goals and strategic objectives during this period of continued change. The strategy will inform the development of our annual business plans and allow us to maintain a clear focus on priorities, success drivers and measures.

Over the last five years, the IESO has contributed to successfully eliminating coal from Ontario's supply mix, reliably introducing a significant amount of renewable generation into the system, and executing procurements that leave Ontario adequately resourced for the foreseeable future. In addition, we have introduced demand response into the market, helped achieve significant energy savings through our conservation programs, and facilitated the transition to a new conservation framework that sees local distribution companies (LDCs) taking a more active role in the achievement of conservation results. We have also implemented a new regional planning process that gives communities a greater say in defining and executing their own energy solutions. Most importantly of all, these have occurred without impacting our ability to maintain a reliable power system for Ontario.

More change awaits Ontario's electricity sector on the policy, technology and structural fronts. Ontario's Climate Change Action Plan, new cap-

and-trade regulations, the introduction of new technologies including the further development of smart grids and storage technology, and the expected consolidation of LDCs with larger amounts of resources embedded in their networks will all have significant impacts on the IESO in the coming years.

Guided by our vision of powering a reliable and sustainable energy future for Ontario, we remain focused on maintaining our core responsibilities. These include planning and operating Ontario's power system, enabling conservation and energy efficiency, procuring supply, and administering Ontario's wholesale electricity market.

Our five-year strategy was designed around our three strategic themes of providing public value; respecting and valuing our communities, customers and stakeholders; and building corporate resilience. With a focus on continued system reliability, a more efficient and sustainable marketplace, providing our insights and technical expertise, and the need to invest in our people and processes, this strategy will help define the priorities of the IESO over the next five years.

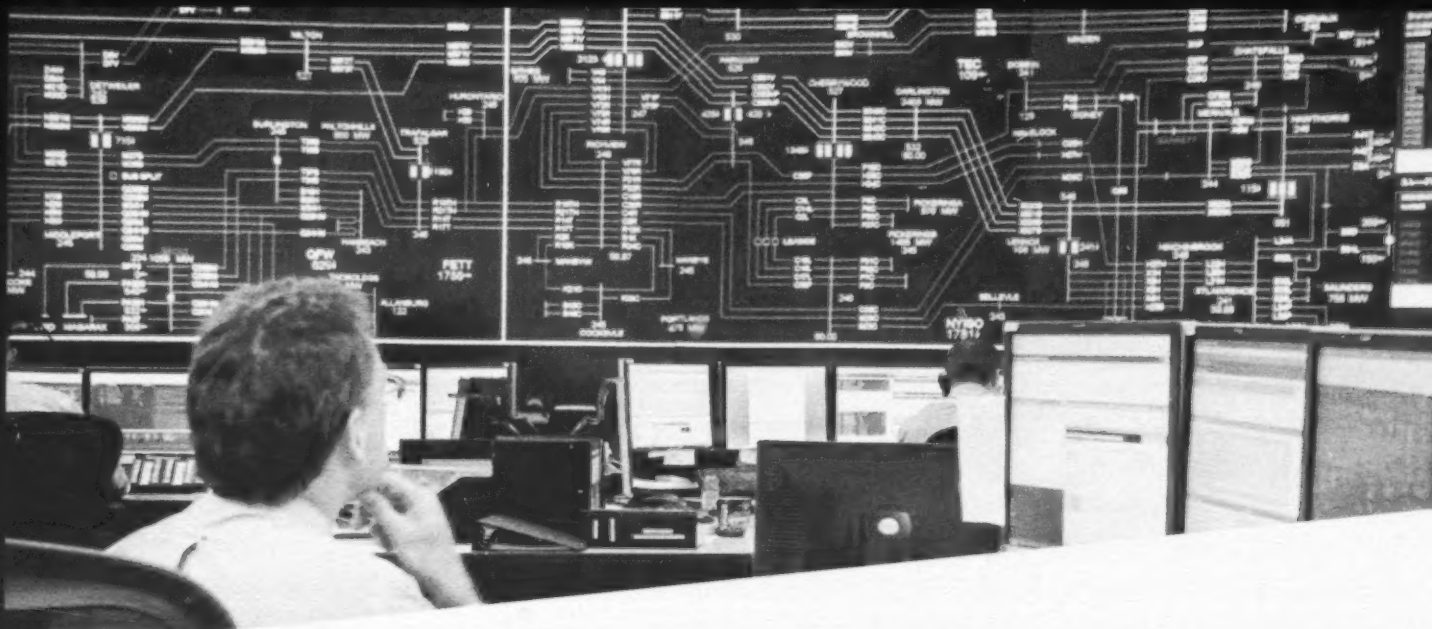
Engagement remains a priority for the IESO and we look forward to continuing to work with our sector partners, communities, customers and stakeholders to better serve the electricity sector during these changing times.

Bruce B. Campbell
*President and Chief
Executive Officer*

Independent Electricity
System Operator

Tim O'Neill
Chairman of the Board

Independent Electricity
System Operator



Vision, Mission and Values

The IESO has a unique vantage point in the electricity sector – from operating the grid in real time to planning for the future needs of the province, from interacting with residential customers on conservation and generation programs to securing over 6,300 MW of electricity from the Bruce Nuclear Generating Station.

The IESO's mandate is far reaching.

For the public, we keep the lights on. We operate the electricity grid in a way that keeps it reliable and sustainable while ensuring value for ratepayers.

For our stakeholders, we engage with those who are affected by our initiatives as we work to evolve the electricity system to respond to changing circumstances.

For many, we are the go-to source for accurate information on Ontario's electricity system, providing technical expertise on electricity matters.

Our vision and mission capture this – our vision leads the way and our mission describes how we'll get there. And as we strive to achieve this vision, we will be grounded in our approach. Our values provide the framework for how we conduct business and define the IESO as an organization.

Vision

Powering a reliable and sustainable energy future for Ontario

Mission

We will do this by:

- Operating and shaping the electricity system and market in an effective and transparent manner
- Planning for and competitively procuring the resources that meet Ontario's electricity needs today and tomorrow
- Leading a culture of conservation
- Seeking and acting on input from our communities, customers and stakeholders
- Sharing relevant and valued information, data, analysis and expertise
- Attracting, retaining and developing a highly skilled and professional workforce.

Values

Trusted

We are trusted for the expert advice and service we provide.

Lead Change

We encourage learning, innovation and change.

Collaborate

We work together for a common purpose.

Diversity

We value the richness of each other's differences.

Integrity

We act with honesty and accountability.

Respect

Courtesy and dignity are at the forefront of all of our relationships.



Environmental Scan

The development of the IESO's five-year strategy included a comprehensive scan of the electricity sector to identify key considerations that could impact Ontario in the coming years. These key considerations include:

Supply and Demand Outlook

As we look at the supply and demand outlook for Ontario over the next 20 years, electricity demand growth is expected to remain relatively flat due to the effects of conservation and energy efficiency, the increase in embedded generation, and the change in the economy to less energy-intensive industries. At the same time, Ontario is expected to see a significant resource turnover, including nuclear refurbishment and retirement. Provided that planned resources come into service on schedule, Ontario is expected to remain adequately supplied for the foreseeable future, giving the IESO an opportunity to focus on the integration of new and emerging technologies through competitive market-based mechanisms.

Climate Change

While 90 percent of Ontario's electricity production now comes from non-fossil resources, there is an opportunity for the electricity system to play a significant role in reducing Ontario's overall emissions through the electrification of transportation and fuel switching. While electricity demand growth is expected to remain relatively flat over the next 20 years, climate change policy could considerably change this picture.

Climate Change Action Plan

With specific commitments for meeting the 2020 emission reduction targets and establishing the framework to meet 2030 and 2050 targets, the Climate Change Action Plan could have a significant impact on how the electricity system is planned and operated. Coordination between the IESO and sector partners will be critical in achieving these emission reduction targets while maintaining a reliable, efficient and sustainable electricity system.

Operability

With the evolving supply mix, we face new operating challenges in managing the bulk power system. Increasing variable generation, integration of distributed energy resources, and changing demand and supply patterns are creating operability challenges with respect to regulation, voltage control and flexibility. The IESO, with stakeholder input, will develop cost-effective solutions to address these challenges.

Emerging Technologies

The electricity sector is evolving with the emergence of new technologies such as microgrids, distributed energy resources, storage, demand management technologies and smart systems. These technologies are shaping the way we plan and operate the IESO-controlled grid with a shift to a more distributed system as compared to the centralized model of the past.

Sustainable Energy Future

With the emergence of these new technologies, there are additional resources available to provide necessary reliability services, each bringing its own unique operating characteristics. This provides an opportunity for the IESO to find innovative and cost-effective solutions to meet provincial and regional reliability needs. This can include leveraging and evolving existing market mechanisms to allow for broad participation in addressing these reliability requirements.

Consumer Engagement

Customers are becoming increasingly engaged and involved in managing their energy consumption. With new technologies being integrated into an increasingly connected world, customers will have the tools to manage their energy consumption in a more responsive manner than in the past, integrating data from appliances, thermostats, vehicles and many other devices.

Regional Planning

With the increase in distributed energy resources, demand management solutions and a more engaged customer base, there is a need to put a greater focus on regional planning and how local resources can meet regional reliability needs. Not only are customers becoming more informed, but they also have views as to how energy services are provided to their communities. Integrating and coordinating regional and bulk planning efforts are critical in developing cost-effective energy solutions for the overall reliability of the electricity system.

Cybersecurity

As the electricity system becomes more distributed, cybersecurity threats will become more diverse, posing additional risks to the reliability of the electricity system. As a result, there is a growing need for greater collaboration and information sharing of cybersecurity practices to protect electricity system operations and critical information.

Community, Customer and Stakeholder Engagement

More engaged customers, a greater focus on regional planning, a more interconnected electricity system, and an evolving sector – these factors all emphasize the need for the IESO to inform and engage communities, customers and stakeholders on electricity matters that may affect them. Engagement must remain a key priority for the IESO.

IESO Corporate Resilience

As with the rest of the electricity sector, the IESO sees a significant percentage of its experienced workforce approaching retirement in the coming years. To meet this challenge, we must invest in our people and processes to ensure an engaging work environment, providing development programs and career opportunities. The IESO must also be a focused and flexible organization in order to support the ongoing transformation of the energy industry.

Engagement with the individuals and organizations impacted by our decisions is one of the IESO's priorities.



Themes

What we do

Goals

What we want to achieve in the next five years

Strategic Objectives

How we will achieve our goals



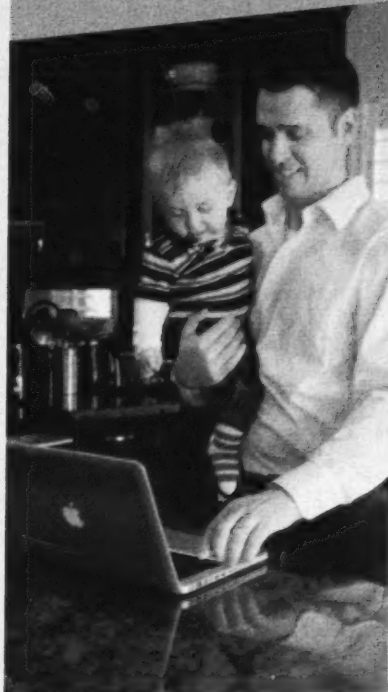
IESO Strategy at a Glance (2016–2020)

The key considerations identified during the environmental scan helped frame the development of the IESO's strategy for the next five years. Building on the company's three core themes – providing public value; respecting and valuing our communities, customers and stakeholders; and building corporate resilience – the IESO set four overarching corporate goals as well as 11 strategic objectives that broadly define the processes through which these goals will be achieved.

Providing public value		Respecting and valuing our communities, customers and stakeholders	Building corporate resilience
Deliver superior reliability performance in a changing environment	Drive to a more efficient and sustainable marketplace	Be recognized as a trusted advisor, informed by engagement	Invest in our people and processes to meet the needs of the sector
- Plan and manage the power system so Ontarians have power when and where they need it. - Enhance reliability and efficiency through coordination of IESO- and LDC-controlled resources. - Promote robust cybersecurity practices across the sector.	- Evolve the IESO markets to increase market efficiency and value for consumers. - Foster an open and competitive electricity marketplace with broad participation.	- Enhance public confidence in the IESO and the sector to facilitate informed customer choice. - Work effectively with government to support policy development and IESO's excellence in implementation. - Seek out and respond to input from communities, customers and stakeholders to inform IESO decisions.	- Strengthen the development and engagement of our employees. - Attract and retain the best talent. - Be a focused and flexible organization positioned to support the ongoing transformation of our industry.

"Deliver superior reliability performance in a changing environment"

- Plan and manage the power system so Ontarians have power when and where they need it.
- Enhance reliability and efficiency through coordination of IESO- and LDC-controlled resources.
- Promote robust cybersecurity practices across the sector.



At the core of the IESO's mandate is a requirement to plan, operate and maintain the reliability of Ontario's electricity system, ranging from minute-to-minute operations to long-term system planning. With the new challenges that we face as Ontario's supply mix evolves and new technologies emerge, the IESO must find new and innovative ways to continue to deliver superior reliability performance to Ontarians.

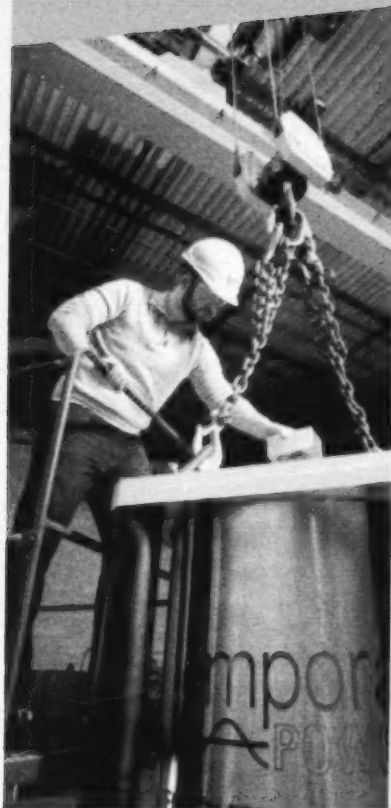
The IESO will achieve this strategic goal by:

- Responding and adapting to changing system conditions, including increases in renewable and distributed energy resources, smart grids, electric vehicles and other new technologies, to maintain power system reliability;
- Supporting the implementation of priority transmission projects, including the connection of remote communities;
- Evolving the regional planning process to better integrate conservation, distributed generation, storage and demand response, and to explore opportunities for local acquisition of these resources;

- Enhancing the organization's situational awareness, particularly with our interconnected neighbours, through increased wide-area monitoring, event analysis capability, and understanding of emerging trends;
- Defining, developing and implementing coordinated operations with LDC partners;
- Maintaining a cybersecurity leadership role through the IESO's cybersecurity forum and related initiatives; and
- Supporting the Ontario Energy Board in its program with respect to cybersecurity practices for regulated entities.

"Drive to a more efficient and sustainable marketplace"

- Evolve the Ontario market to increase market efficiency and value for consumers.
- Foster an open and competitive electricity marketplace with broad participation.



In providing a reliable electricity system for Ontarians, the IESO aims to do so in a cost effective and sustainable manner. While the emergence of new technologies may pose challenges to reliable system operations, it also creates opportunities and alternatives to provide needed reliability services, introducing more competition into a market where resources can participate on a level playing field.

These emerging technologies are already altering the way the power system operates. From the centralized model that features large-scale generators delivering power across high-voltage transmission lines to lower-voltage distribution networks, the electricity system is evolving to a more distributed model with more small-scale generation located close to the load that it serves. This shift is requiring sector participants to re-examine their business models and evolve to meet these changing conditions. With its unique vantage point, the IESO can help shape how this energy future unfolds and is looking to work with sector partners to define this vision.

The IESO will achieve this strategic goal by:

- Designing, developing and implementing a renewed market structure, addressing known market inefficiencies and laying the foundation for a more dynamic marketplace in the future. The IESO will look at both evolving the

wholesale energy market and growing capacity as a market-based product. In doing so, the IESO will build on stakeholder input and ensure appropriate funding, rules, processes and governance structures are in place;

- Continuing to enhance the demand response market with a focus on enabling residential demand response;
- Designing, implementing and administering a portfolio of competitive resource acquisition mechanisms for a variety of services (capacity, flexibility and ancillary services) to address needs identified through bulk and regional planning. These mechanisms should allow for broad participation while meeting reliability needs and policy goals, such as sustainability and low carbon, while balancing ratepayer value with fairness to service suppliers;
- Enhancing the value of electricity data by expanding the type of and access to smart meter data received by our systems;
- Working with sector partners to foster an open and competitive electricity marketplace that is equally open to the buy and sell sides, encourages new opportunities for innovation and meeting policy goals, and focuses on acquiring services, agnostic to technologies; and
- Continuing to promote competitive solutions for energy efficiency to inform the future of conservation.

“Be recognized as a trusted advisor, informed by engagement”

- Enhance public confidence in the IESO and the sector to facilitate informed customer choice.
- Work effectively with government to support policy development and IESO's excellence in implementation.
- Seek out and respond to input from communities, customers and stakeholders to inform IESO decisions.

We recognize that, in order to be successful in achieving our public value goals of delivering superior performance in a changing environment and driving to a more efficient and sustainable marketplace, our efforts must be supported. We need our stakeholders, customers and others to have trust in us – to trust that we will not only advise based on our broad technical expertise but that we will also actively and transparently engage with our communities, customers and stakeholders to inform our decisions and advice.

The IESO will achieve this strategic goal by:

- Using communication opportunities, such as those provided through regional planning and speaking engagements, to inform the public on electricity matters;
- Maintaining and building on our positive relationships with First Nations & Métis communities through the use of innovative approaches to engagement;

- Enhancing both transparency of and access to data and information to meet the needs of communities, customers, stakeholders and others;
- Building trust with government by providing unbiased expertise and advice;
- Effectively implementing initiatives that achieve government policy objectives; and
- Applying IESO stakeholder principles in the development of initiatives by ensuring stakeholders and communities have the opportunity to provide input on matters that impact them.



“Invest in our people and processes to meet the needs of the sector”

- Strengthen the development and engagement of our employees.
- Attract and retain the best talent.
- Be a focused and flexible organization positioned to support the ongoing transformation of our industry.



Our employees are critical to our success. As such, we need to focus on the ongoing development of our people and ensuring we have engaged and high performing employees. In addition, as we undertake to implement our strategy and further define our role in the electricity sector, we require effective organizational processes to achieve our desired outcomes. The need to minimize the financial impacts of our operations on electricity customers will require us to be flexible in deploying our resources to manage the ongoing transformation of our sector.

The IESO will achieve this strategic goal by:

- Providing formal opportunities for employees to enhance cross-functional understanding;
- Conducting employee engagement surveys with annual updates to action plans;
- Implementing the Operations Readiness Initiative¹ to meet future operational needs;
- Achieving excellence in project governance and management;
- Evolving the IESO systems and practices to best serve our evolving business priorities;
- Developing an enabling environment that facilitates high performance and builds the appetite and capacity for change;
- Adopting best practices for records and information management;
- Implementing a talent management system that includes enhanced recruitment and selection capabilities, a suite of comprehensive learning and development programs, organizational development services, and reward and recognition plans; and
- Expanding and deepening leadership bench-strength and capabilities.

¹ The Operations Readiness Initiative will provide an operational framework that will allow the IESO to adapt to the evolving environment while maintaining the same level of performance in managing the reliability of the grid.



Looking Ahead

This strategy provides a roadmap for the IESO's activities over the next five years. The strategy will help set the priorities for the organization and will inform the development of our annual business plans. Recognizing the changing environment in which we operate, the IESO will do an annual review of our strategy and the sector overall, including seeking stakeholder input, and update our strategy as necessary.

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